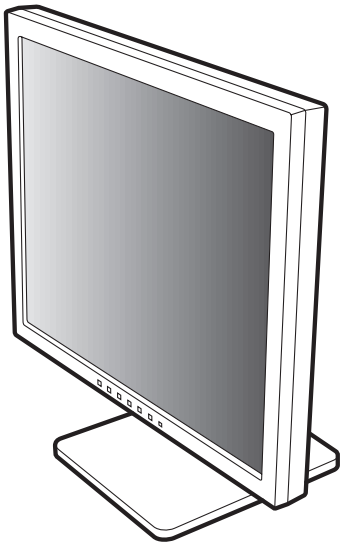
SHARP SERVICE MANUAL

CODE : 00ZLLT19D1SME



LCD MONITOR

LL-T19D1-H
MODEL LL-T19D1-B

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Model Name	Product Name		Color
	For USA	For Other	
LL-T19D1H	LL-T19D1U	LL-T19D1E	Gray
LL-T19D1B	LL-T19D1Y	LL-T19D1P	Black

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

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The contents are subject to change without notice.

CHAPTER 1. OUTLINE OF THE PRODUCT, NOMENCLATURE AND FUNCTION

1. SPECIFICATIONS

■ Product specifications

- Model name

  LL-T19D1-H (Frosty gray)/LL-T19D1-B (Black)

- LCD display

  48 cm measured diagonally
  TFT LCD module

- Resolution (max.)

  SXGA 1280 x 1024 pixels

- Displayable colors (max.)

  Approx. 16.77 million colors (8bit)

- Brightness (max.)

  300cd/m^2

- Dot pitch

  0.294 (H) x 0.294 (V) mm

- Contrast ratio

  700 : 1

- Angle of visibility

  Left-right 170°; Up-down 170° (contrast ratio ≧ 10)

- Screen display size

  Horizontal 376.3 mm x Vertical 301.1 mm

- Video signal

  Analog: Analog RGB (0.7Vp-p) [75Ω]
  Digital: DVI standard based on 1.0

- Sync signal

  Separate Sync (TTL level: +/-), Sync on Green, Composite Sync (TTL level: +/-)

- Expansion compensation

  Digital scaling (Enlarges VGA/SVGA/XGA etc. to full screen size.)

- Plug & Play

  VESA DDC2B compatible

- Power management

  VESA: based on DPMS
  DVI: based on DMPM

- Input signal terminal

  Analog: 15 pin mini D-sub (3 rows) x 2
  Digital: 24 pin DVI-D x 1

- Screen tilt

  Upward approx. 0° - 20°; downward approx. 0° - 5°

- Screen swivel

  Approx. 90° from left through right (Turn table type)

- Power supply

  AC100 - 240V, 50/60Hz

- Temperature of operating environment

  5 - 35°C

- Power consumption

  43W maximum, 2.8W when in power-saving mode

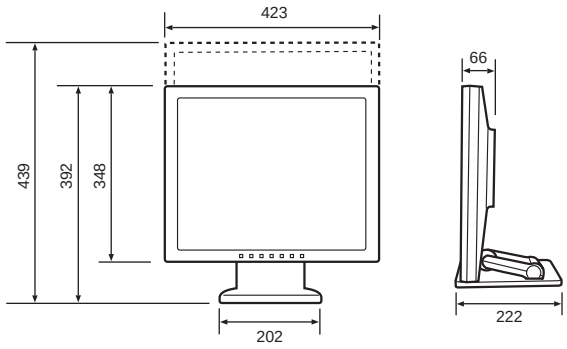
- Dimensions

  Approx. 423 (W) x 222 (D) x 392 - 439 (H) mm

- Weight

  Approx. 6.9kg (approx. 4.7kg excluding stand)
  (Excluding signal cable.)

■ Dimensions (Units: mm)



- Analog signal cable: approx. 1.8 m
- Digital signal cable, NL-C01E (separately): approx. 2.0 m

■ Relevant signal timings (analog)

Display mode		Hsync	Vsync	Dot frequency
VESA	640 x 480	31.5kHz	60Hz	25.175MHz
		37.9kHz	72Hz	31.5MHz
		37.5kHz	75Hz	31.5MHz
	800 x 600	35.1kHz	56Hz	36.0MHz
		37.9kHz	60Hz	40.0MHz
		48.1kHz	72Hz	50.0MHz
		46.9kHz	75Hz	49.5MHz
	1024 x 768	48.4kHz	60Hz	65.0MHz
		56.5kHz	70Hz	75.0MHz
		60.0kHz	75Hz	78.75MHz
	1152 x 864	67.5kHz	75Hz	108.0MHz
	1280 x 960	60.0kHz	60Hz	108.0MHz
	1280 x 1024	64.0kHz	60Hz	108.0MHz
		80.0kHz	75Hz	135.0MHz
US text	720 x 400	31.5kHz	70Hz	28.3MHz
Power Macintosh series	640 x 480	35.0kHz	66.7Hz	30.2MHz
	832 x 624	49.7kHz	74.6Hz	57.3MHz
	1024 x 768	60.2kHz	75Hz	80.0MHz
	1152 x 870	68.7kHz	75Hz	100.0MHz
	1280 x 1024	64.0kHz	60Hz	108.0MHz
		80.0kHz	75Hz	135.0MHz
Sun Ultra series	1024 x 768	48.3kHz	60Hz	64.13MHz
		53.6kHz	66Hz	70.4MHz
		56.6kHz	70Hz	74.25MHz
	1152 x 900	61.8kHz	66Hz	94.88MHz
		71.8kHz	76.2Hz	108.23MHz
	1280 x 1024	71.7kHz	67.2Hz	117.01MHz
		81.1kHz	76Hz	134.99MHz

- Recommended resolution is 1280 x 1024.
- All are compliant only with non-interlaced.
- Frequencies for Power Macintosh and Sun Ultra series are reference values. To connect, another adapter (commercially available) may be required.
- If the monitor is receiving timing signals that are not compatible, [OUT OF TIMING] will appear.
  Follow your computer's instruction manual to set the timing so that it is compatible with the monitor.
- If the monitor is not receiving any signal (synch signal), [NO SIGNAL] will appear.

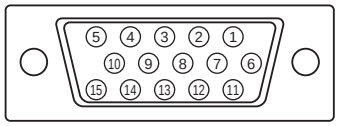
■ Relevant signal timings (digital)

Display mode		Hsync	Vsync	Dot frequency
VESA	640 x 480	31.5kHz	60Hz	25.175MHz
		37.9kHz	72Hz	31.5MHz
		37.5kHz	75Hz	31.5MHz
	800 x 600	37.9kHz	60Hz	40.0MHz
		48.1kHz	72Hz	50.0MHz
		46.9kHz	75Hz	49.5MHz
	1024 x 768	48.4kHz	60Hz	65.0MHz
		56.5kHz	70Hz	75.0MHz
		60.0kHz	75Hz	78.75MHz
	1152 x 864	67.5kHz	75Hz	108.0MHz
	1280 x 960	60.0kHz	60Hz	108.0MHz
	1280 x 1024	64.0kHz	60Hz	108.0MHz
US text	720 x 400	31.5kHz	70Hz	28.3MHz

- Recommended resolution is 1280 x 1024.
- All are compliant only with non-interlaced.
- A computer with an output terminal conforming to DVI (DVI-D24 pin or DVI-I29 pin) and with SXGA output capability can be connected here.
  (Depending on the type of computer to be connected, the display may not work correctly.)
- If the monitor is receiving timing signals that are not compatible, [OUT OF TIMING] will appear.
  Follow your computer's instruction manual to set the timing so that it is compatible with the monitor.
- If the monitor is not receiving any signal (synch signal), [NO SIGNAL] will appear.

■ The analog RGB input connector pin

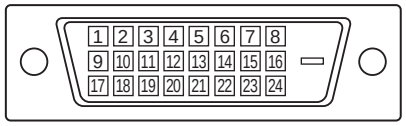
(Mini D-sub connector with 15 pins)



No.	Function	No.	Function
1	Red video signal input	9	+5V
2	Green video signal input	10	GND
3	Blue video signal input	11	N.C.
4	GND	12	DDC data
5	GND	13	For Hsync signal input
6	For red video signal GND	14	For Vsync signal input
7	For green video signal GND	15	DDC clock
8	For blue video signal GND		

■ The DVI-D input connector pin

(DVI-D connector with 24 pins)



No.	Function	No.	Function
1	TMDS data 2-	13	N.C.
2	TMDS data 2+	14	+5V
3	TMDS data 2/4 shield	15	GND
4	N.C.	16	Hot plug detection
5	N.C.	17	TMDS data 0-
6	DDC clock	18	TMDS data 0+
7	DDC data	19	TMDS data 0/5 shield
8	N.C.	20	N.C.
9	TMDS data 1-	21	N.C.
10	TMDS data 1+	22	TMDS clock shield
11	TMDS data 1/3 shield	23	TMDS clock +
12	N.C.	24	TMDS clock -

■ Power management

The monitor is based on VESA DPMS and the DVI DMPM standards. To activate the monitor's Power Management function, both the video card and the computer must conform to the VESA DPMS standard and the DVI DMPM standard.

DPMS: Display Power Manegament Signalling

DPMS mode	Screen	Power consumption	H-sync	V-sync
ON	Display on	43W	Yes	Yes
STANDBY	Display off	2.8W	No	Yes
SUSPEND			Yes	No
OFF			No	No

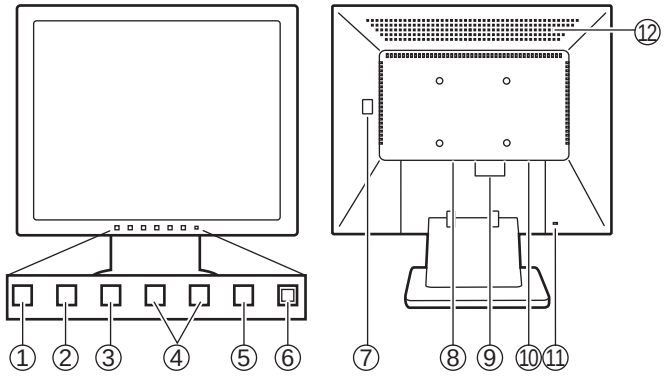
DMPM: Digital Monitor Power Management

DMPM mode	Screen	Power consumption
ON	Display on	43W
OFF	Display off	2.8W

■ DDC (Plug & Play)

This monitor supports the VESA DDC (Display Data Channel) standard. DDC is a signal standard for carrying out Plug & Play functions on the monitor or PC. It transfers information such as degree of resolution between the monitor and PC. You can use this function if your PC is DDC compliant and if it is set so that it can detect the Plug & Play monitor.
There are many varieties of DDC due to the differences between systems. This monitor works with DDC2B.

2. PRODUCT DESCRIPTION



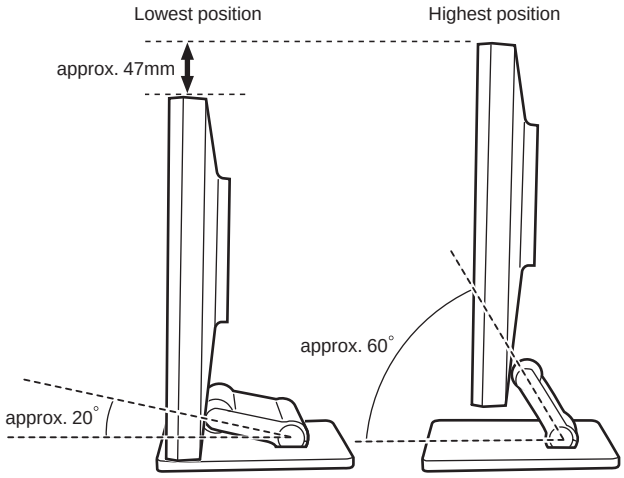
① INPUT button	To switch between the signal's input terminals.
② MENU button	This button is used to pop-up, select and close the OSD (On Screen Display) Menu.
③ ▼/MODE button	When the OSD Menu is displayed: This button is used to select menu options. When the OSD Menu is not displayed: This button is used to set DISPLAY MODE.
④ ◄► buttons	When the OSD Menu is displayed: These buttons are used to select an option or adjust the value of the selected option. When the OSD Menu is not displayed: These buttons are used to adjust backlight brightness.
⑤ Power button	Pressing this button turns the power on.
⑥ Power LED	This LED is lit green when in use and orange when in power-saving mode.
⑦ Main power switch	
⑧ Power terminal	
⑨ Analog RGB input terminal 1 and 2	The analog signal cable is connected here.
⑩ DVI-D input terminal	The computer's digital RGB output terminal can be connected here. The separately-sold cable (NL-C01E) is necessary for connection. It can be connected to a computer with a DVI-compatible output terminal (DVI-D24 pin or DVI-I29 pin) and which has SXGA output ability. Depending on the computer to be connected, correct display may or may not be possible.
⑪ Security lock anchor	By connecting a security lock (commercially available) to the security lock anchor, the monitor is fixed so that it cannot be transported. The security slot works in conjunction with Kensington Micro Saver Security Systems.
⑫ Ventilation openings	Note: Never block the ventilation openings as this may lead to overheating inside the monitor and result in malfunction.

■ Height adjustment, angle adjustment

Caution:

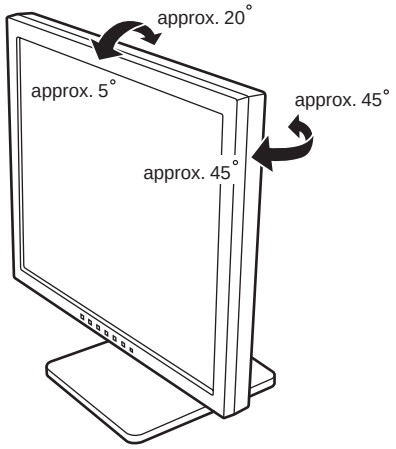
- Pressure from hands on the LCD panel could cause damage.
- Do not attempt to move the monitor beyond its movement range. Applying excessive force to move the monitor may damage the product.
- Be careful not to allow your fingers to be pinched.

Height adjustment



- When positioning the display higher, hold the stand tight so that it does not move together with the display.

Angle adjustment



CHAPTER 2. CONNECTION, ADJUSTMENT, OPERATION, AND FUNCTIONS

1. CONNECTION

Caution:

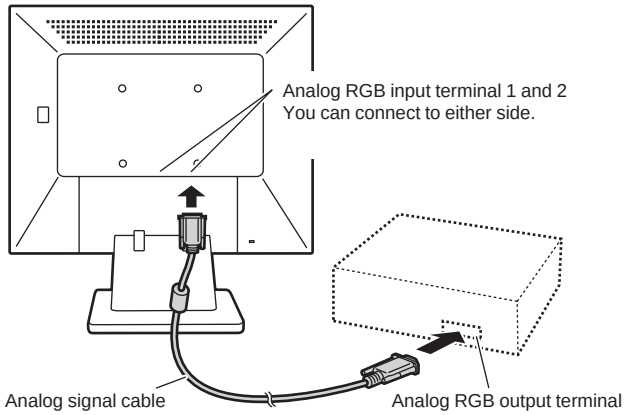
- When connecting, ensure that both the monitor and computer are switched off.
- Be careful not to overly bend the cable or add extension cords as this could lead to a malfunction.

1-1. Connecting the monitor to a computer

■ Analog connection

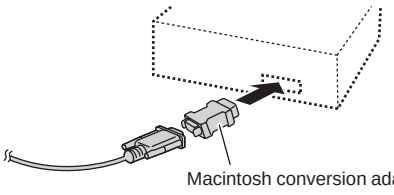
Connect the analog signal cable to the analog RGB output terminal of the computer.

- For analog connection, use the analog signal cable accessory or a commercially available one (both ends should be mini D-sub15 pin).



- Paying attention to connector direction, firmly insert the signal cable vertically into the connector, and then tighten the screws at both sides.

If connecting to a D-sub 15 pin 2 row Apple Power Macintosh, attach a Macintosh conversion adapter (commercially available) to the analog signal cable.

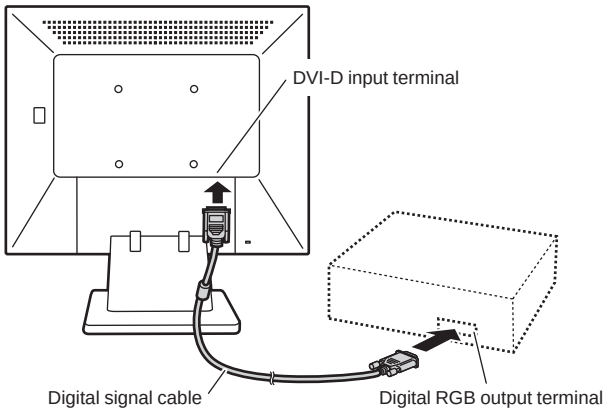


Note: If connecting to the Sun Ultra series, a conversion adapter (commercially available) may be required.

■ Digital connection

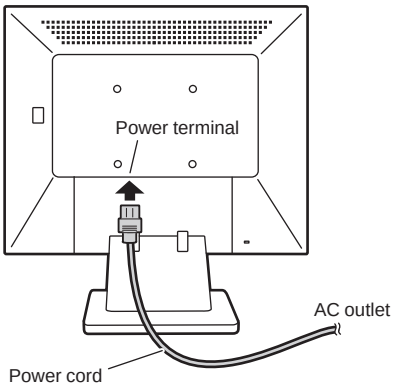
Connect the separately-sold digital signal cable (NL-C01E) to the digital RGB output terminal of the computer.

- The monitor has an input for connecting to a computer with a DVI-compatible output connector (DVI-D24 pin or DVI-I29 pin) and SXGA output capability. (Depending on the type of computer to be connected, the display may not work correctly.)



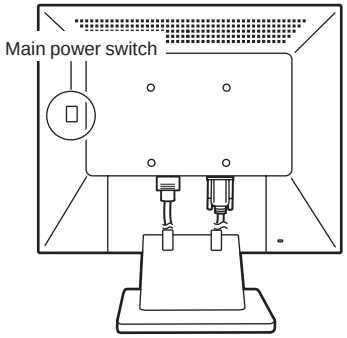
- Paying attention to connector direction, firmly insert the signal cable vertically into the connector, and then tighten the screws at both sides.

1-2. Connecting the monitor to a power source



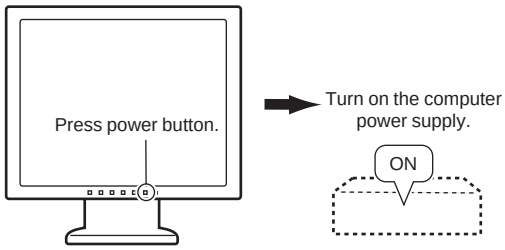
1-3. Turning the power on

1. Turn on the main power of the monitor.



- When switching the main power switch on and off, always wait for an interval of at least 5 seconds. Rapid switching may result in malfunction.

2. Press the monitor's POWER button.
   The power LED will light up orange.
3. Turn on the computer.



When a signal is input from the computer, the power LED lights up green, and the screen is displayed. (After power is turned on, it may take a little time until the screen is displayed.)

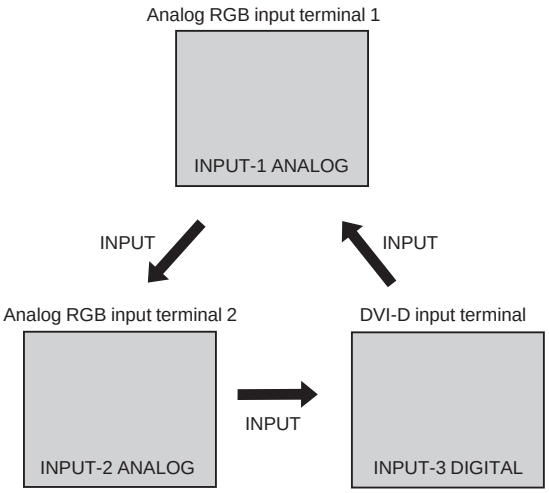
- If the input terminal to which the computer is connected has not been selected, the screen will not be displayed. If necessary, perform input terminal switching.

Notes:

- When using an analog signal, perform an automatic screen adjustment under the following conditions:
  - Using the monitor for the first time.
  - After having changed the system settings during use.
- Depending on the computer or OS, it may be necessary to use the computer to install monitor set-up information.
- When connecting to a notebook, if the notebook computer's screen is set so that it is displaying at the same time, the MS-DOS screen may not be able to display properly. In this case, change the settings so that only the monitor is displaying.

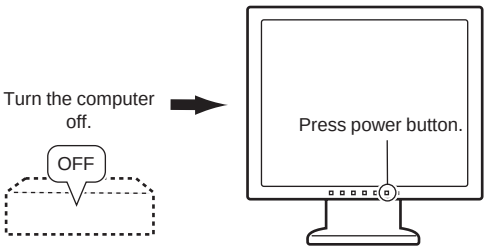
1-4. Changing between input terminals

Use the INPUT button to switch between signal input terminals.



1-5. Turning the power off

1. Turn the computer off.
2. Press the monitor's POWER button.
   The Power LED will disappear.



If the monitor will not be used for a long time, turn off the main power switch of the monitor, and remove the power plug from the outlet.

1-6. Instructions for attaching a VESA compliant arm

An arm or stand based on the VESA standard (commercially available) can be attached to the monitor.
Procurement of the arm or stand is at the customer's discretion.

Arms or stands able to be used

Attachments must satisfy the following.

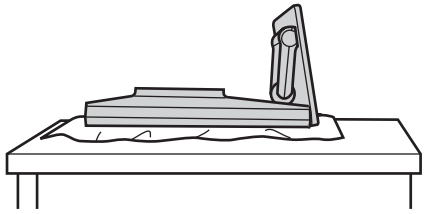
- Compatible with the VESA standard
- Have a gap of 100 mm x 100 mm between the screw holes on the section to be attached
- Not be likely to fall off or break off after being attached to the monitor.

How to attach the arm or stand

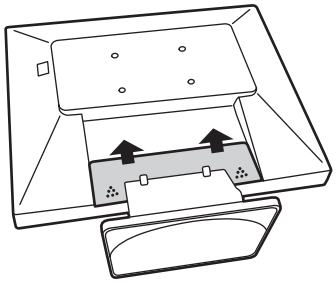
- Be careful not to overly bend the cable or add extension cords as this could lead to malfunction.
- While following these instructions, please also refer to the installation instructions in the operation manual included with the arm or stand.

Caution: Be careful not to get your fingers pinched between the display and stand nor to let the stand drop. These could lead to injury.

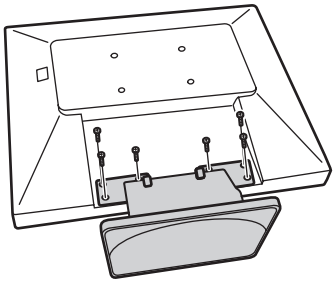
1. Remove the cables.
2. Spread out a soft cloth on a suitable horizontal surface.
3. Being careful not to damage the monitor, gently lay the monitor on it display-side down.



4. Remove the cover.
   - While pressing the ⁂ areas on the sides, push it up.



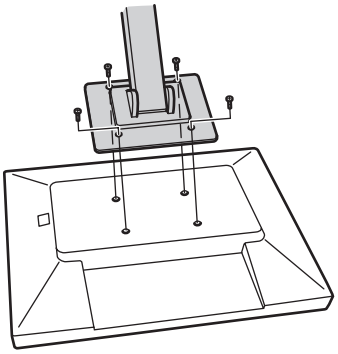
5. Remove the six screws and then remove the stand from the monitor.



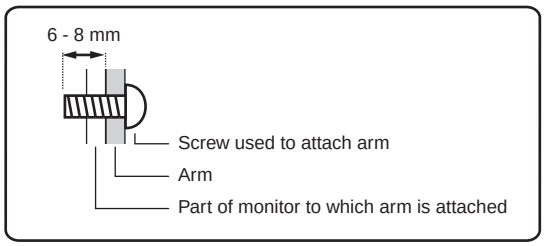
Note:

- The stand is specially made for use with this monitor. Once having removed the stand, never attempt to attach it to another device.
- Once having removed the screws, store them together with the stand and if the stand is ever re-attached be sure to use the original screws.
  Using different screws could lead to a malfunction.

6. Attach the arm to the monitor with the four screws.



Note: The screws used to attach the arm should be M4 screws with a length of 6 mm ~ 8 mm protruding from the surface to be attached.
Using different screws could cause the monitor to fall off or to be internally damaged.



2. ADJUSTMENT

2-1. ADJUSTMENT METHOD

1) Resetting all adjustment values

[MENU] + [▼/MODE] Power ON

Press the above two buttons at same time, and while turn the power on.

2) ADJUSTMENT menu reset

[MENU] + [◄] Press the two buttons at same time.

3) Adjustment lock function

[MENU] Power ON

- Valid even when there is no input signal.
- When the above procedure is executed, key lock/release is changed over.
- When key lock is set, the black display is shown and "ADJUSTMENT LOCKED" is displayed for about 2 sec.
- When key release is set, the black display is shown and "ADJUSTMENT UNLOCKED" is displayed for about 2 sec.
- When key lock is set, all the keys except for the power key are disabled.

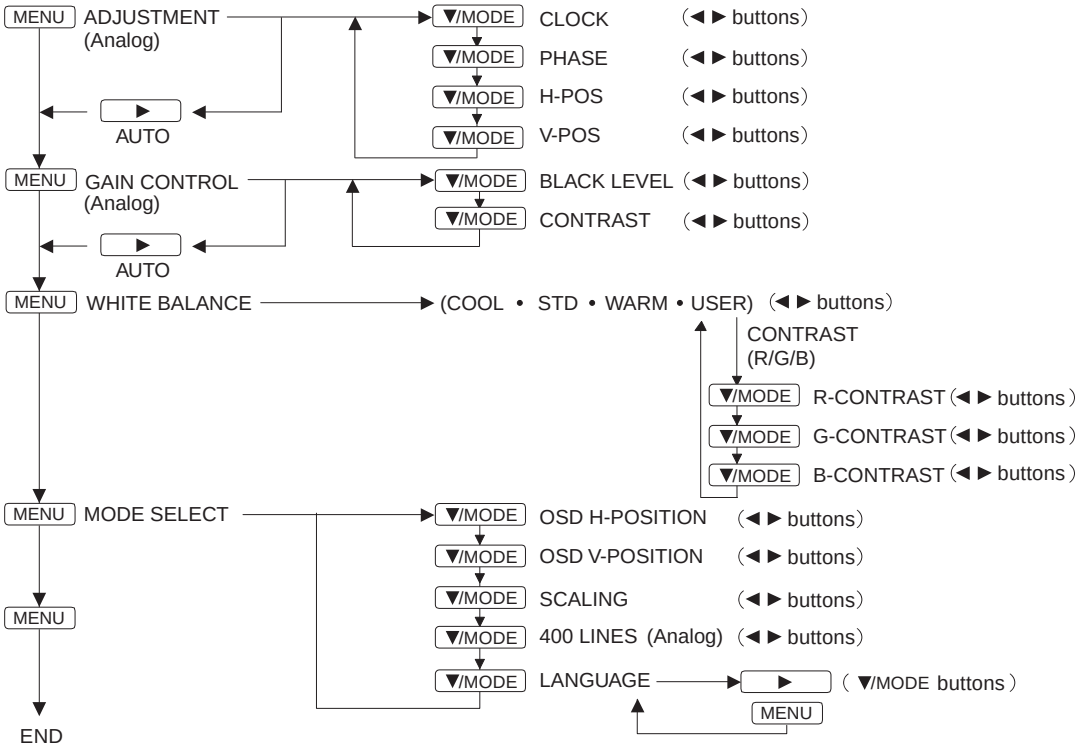
4) Adjusting the backlight

[◄] [►] buttons

5) Setting display mode

[▼/MODE] button (STD, OFFICE, sRGB, VIVID)

6) Screen adjustment



7) Version display (for service)

While pressing [▼/MODE] [◄] [►], turn on the power.

MODEL NAME	:	LL-T19D1
VERSION	:	1.000
DATE	:	2/07/2003
CHECK SUM	:	xxxx
H-SYNC.	:	X Hz
V-SYNC.	:	X kHz

- Valid even when there is no input signal.
- The Model name version, the date, H-SYNC, V-SYNC and check sum are displayed.
- When [MENU] is pressed, the version display disappears.
- All the keys except for [MENU] and the power key are disabled.
- The version display keeps ON until [MENU] or the power key is pressed.

6) Aging (for service)

While pressing [MENU] + [▼/MODE] + [◄], turn on the power.

- When the selftest is executed, no menu is shown.
- When the selftest is executed, the display shows Red → Green → Blue → Yellow → Purple → Light Blue → White → Black repeatedly.
- When the selftest is executed, all the keys except for the power key are disabled.
- Turn off the power to terminate the selftest.
- When the signal is inputted, the screen inputted is displayed and it does not entry into aging mode.

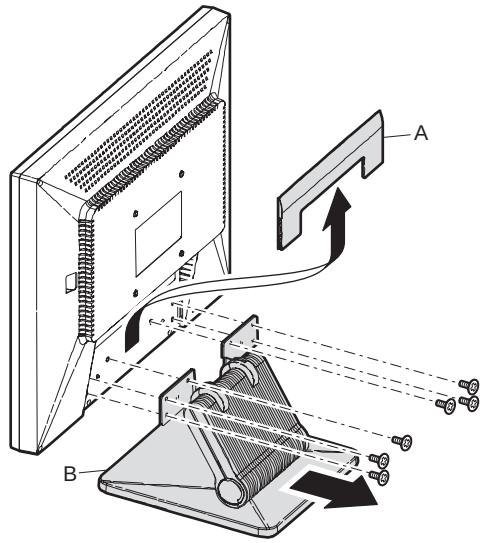
2-2. ADJUSTMENT ITEM LIST

BUTTON	ITEM			ADJUSTMENT	DESCRIPTION
MENU	MENU 1: ADJUSTMENT	MANUAL	CLOCK	0~255	CLOCK: Adjust so that vertical flicker noise is not emitted. (◀▶ buttons)
			PHASE	0~32	PHASE: Adjust so that horizontal flicker noise is not emitted. (◀▶ buttons)
			H-POS	0~255	H-POS (horizontal positioning) and V-POS (vertical positioning) To center the screen image within the boundaries of the screen, adjust the left-right (H-POS) values and the up-down (V-POS) values. (◀▶ buttons)
			V-POS	0~64	
		AUTO			Automatic screen adjustment Options in the ADJUSTMENT Menu can be adjusted automatically (CLOCK, PHASE, H-POS V-POS).
	MENU 2: GAIN CONTROL	MANUAL	BLACK LEVEL	0~63	BLACK LEVEL: Total screen brightness can be adjusted while watching the color pattern. (◀▶ buttons)
			CONTRAST	0~63	CONTRAST: While watching the color pattern, adjustments can be made so that all graduations appear. (◀▶ buttons)
		AUTO			GAIN CONTROL Menu AUTO: Every menu option is automatically adjusted using the Auto Gain Control function.
MENU 1 ↓ MENU 2 ↓ MENU 3 ↓ MENU 4 ↓ MENU END	MENU 3: WHITE BALANCE			COOL • STD • WARM (5 levels), USER R • G • B: 0~63	WHITE BALANCE Menu COOL : Color tone bluer than standard • : Color tone slightly bluer than standard STD : Color tone standard setting • : Color tone slightly redder than standard WARM : Color tone redder than standard USER R-CONTRAST: ◀ button for blue-green ▶ button for red G-CONTRAST: ◀ button for purple ▶ button for green B-CONTRAST: ◀ button for yellow ▶ button for blue
	MENU 4: MODE SELECT	OSD H-POSITION (OSD horizontal position)			The position of the OSD display can be moved to the left and right. (◀▶ buttons)
		OSD V-POSITION (OSD vertical position)			The position of the OSD display can be moved up and down. (◀▶ buttons)
		SCALING (Level of scaling)		0~2	SCALING (Level of scaling) Adjusts the image to optimum sharpness when Screen expansion is taken. (◀▶buttons)
		400 LINES (degree of resolution)		640, 720	You can specify the horizonal resolution of a 400 line screen when using US text, etc. (◀▶buttons)
		LANGUAGE		7 countrys DEUTSCH, ENGLISH, ESPANOL, FRANCAIS, ITALIANO, NETHERLAND, SVENSKA	LANGUAGE Messages displayed on the screen and OSD Menu contents can be changed to the following languages. Dutch, English, French, German, Spanish, Italian, Swedish.
▼/MODE					Select the item
				sRGB, OFFICE, STD, VIVID	Setting color mode when the ADJUSTMENT Menu is not displayed. STD: Displays image with the color tone results from original scheme of liquid crystal panel. OFFICE: Display brightness is lowered. The brightness is set to a level that is easier on the eyes than with other modes and saves power. sRGB: sRGB is international standard of color representation specified by IEC (International Electrotechnical Commission). Color conversion is made in taking account of liquid crystals characteristics and represents color tone close to it original image. VIVID: Displays an image with dynamic and VIVID primary colors.
◀▶				Bright: 0~31	Adjusting the backlight
POWER OFF					

CHAPTER 3. DISASSEMBLY AND ASSEMBLY

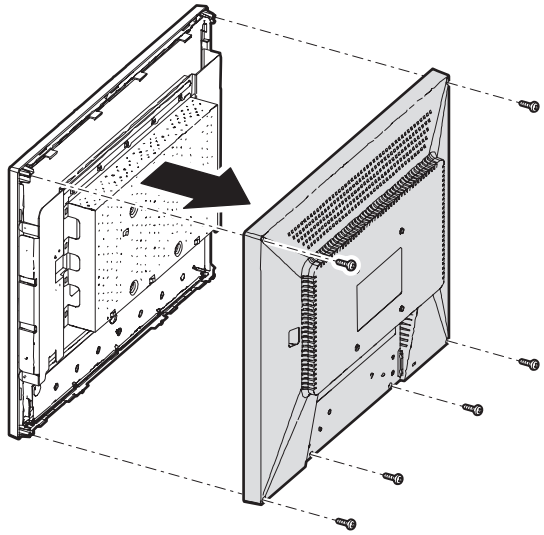
1. STAND UNIT REMOVAL

1) Remove the rear cover by sliding it upward.
2) Remove the screws, and remove the stand unit (B).

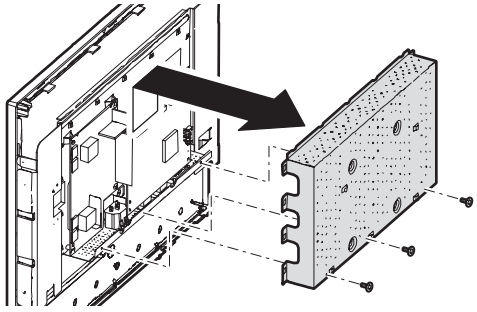


2. I/F PWB REMOVAL

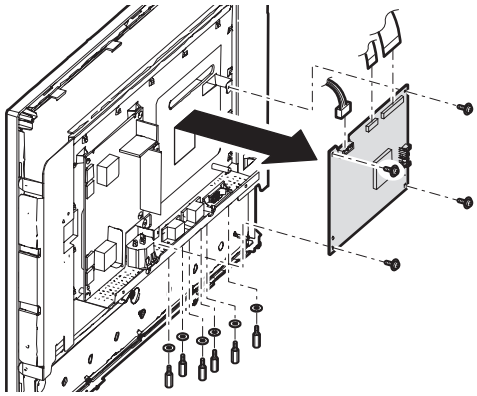
1) Remove the screws, and remove the rear cabinet.



2) Remove the screws, and remove the shield by sliding it upward.

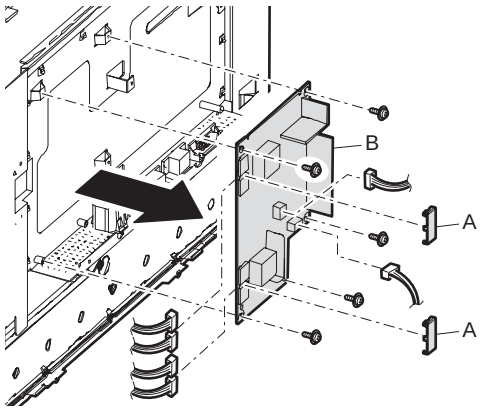


3) Remove the connector and flat cable.
4) Remove the hex. screws, washer and screws, and remove the I/F PWB by sliding it upward.



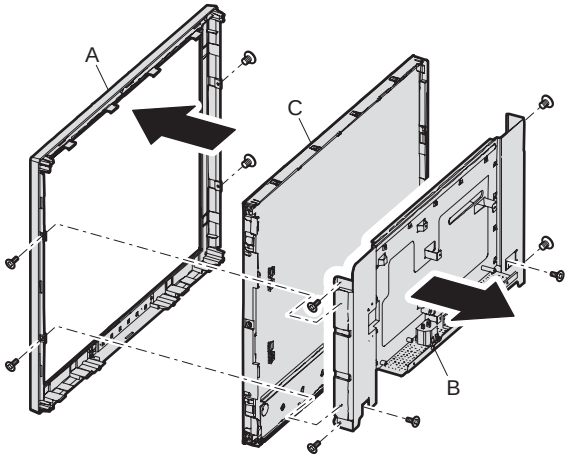
3. P/I PWB REMOVAL

1) Remove the connector covers (A), and remove the connectors.
2) Remove the screws, and remove the P/I PWB (B).

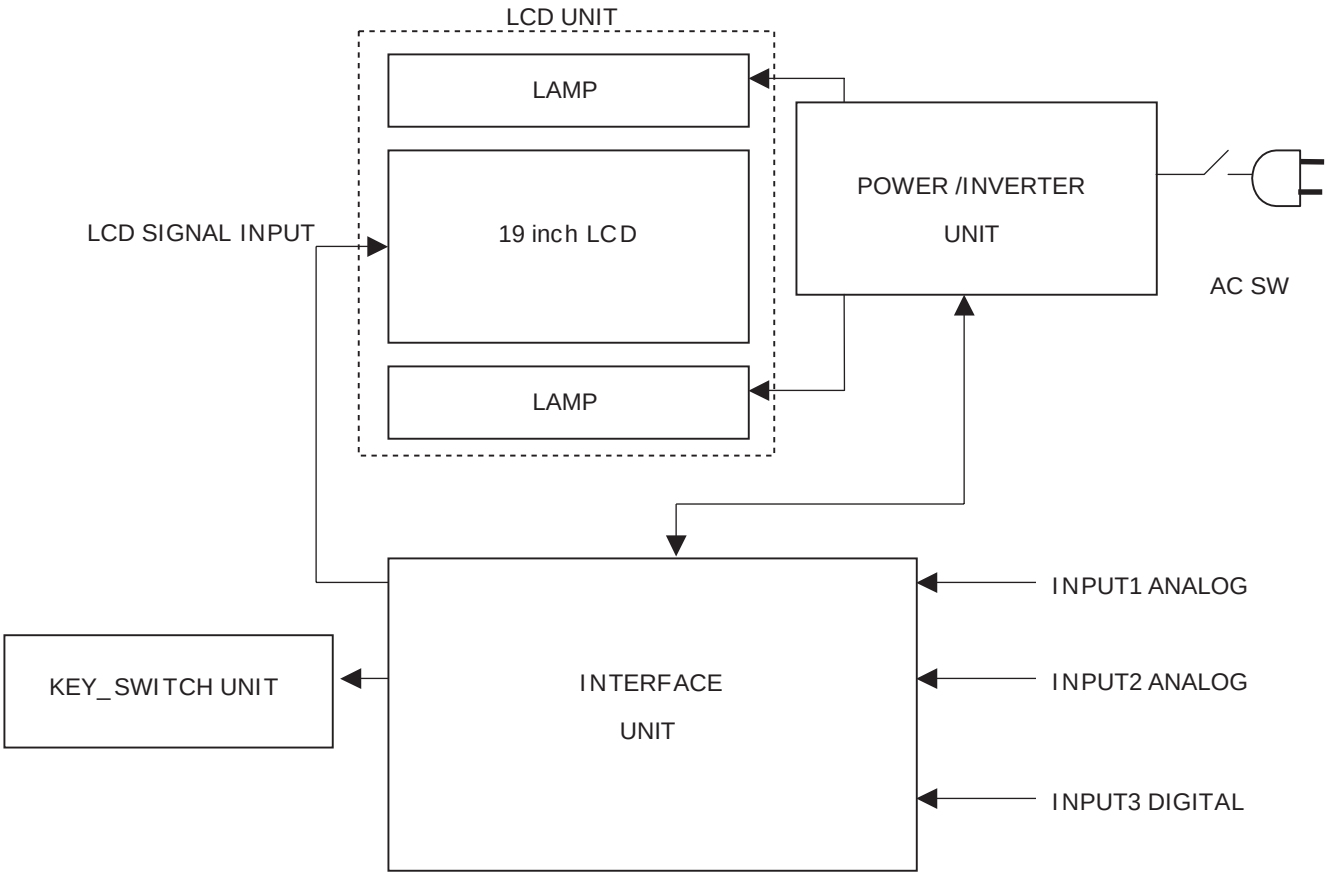


4. LCD UNIT REMOVAL

1) Remove the screws, and remove the front cabinet (A).
2) Remove the screws, and remove the LCD unit (C) from the bracket panel (B).



CHAPTER 4. BLOCK DIAGRAM



■ CONNECTOR SIGNAL TABLE

Connector CN100

1	+12V
2	+12V
3	+12V
4	N.C
5	GND
6	GND
7	GND
8	BLK_ON/OFF
9	BRIGHTNESS

Connector CN300

1	GND
2	INPUT
3	LED_GREEN
4	LED_AMBER
5	POWER
6	RIGHT
7	LEFT
8	MODE
9	MENU

Connector CN500

1	ATX0-
2	ATX0+
3	ATX1-
4	ATX1+
5	ATX2-
6	ATX2+
7	GND
8	ACLKT-
9	ACLKT+
10	ATX3-
11	ATX3+
12	BTX0-
13	BTX0+
14	GNC
15	BTX1-
16	BTX1+
17	GND
18	BTX2-
19	BTX2+
20	BCLKT-
21	BCLKT+
22	BTX3-
23	BTX3+
24	GND
25	GND
26	N.C
27	N.C
28	VPNL
29	VPNL
30	VPNL

Connector CN601

1	RED
2	GREEN
3	BLUE
4	GND
5	GND
6	GND
7	GND
8	GND
9	+5V
10	GND
11	GND
12	SDA
13	H-SYNC
14	V-SYNC
15	SCL

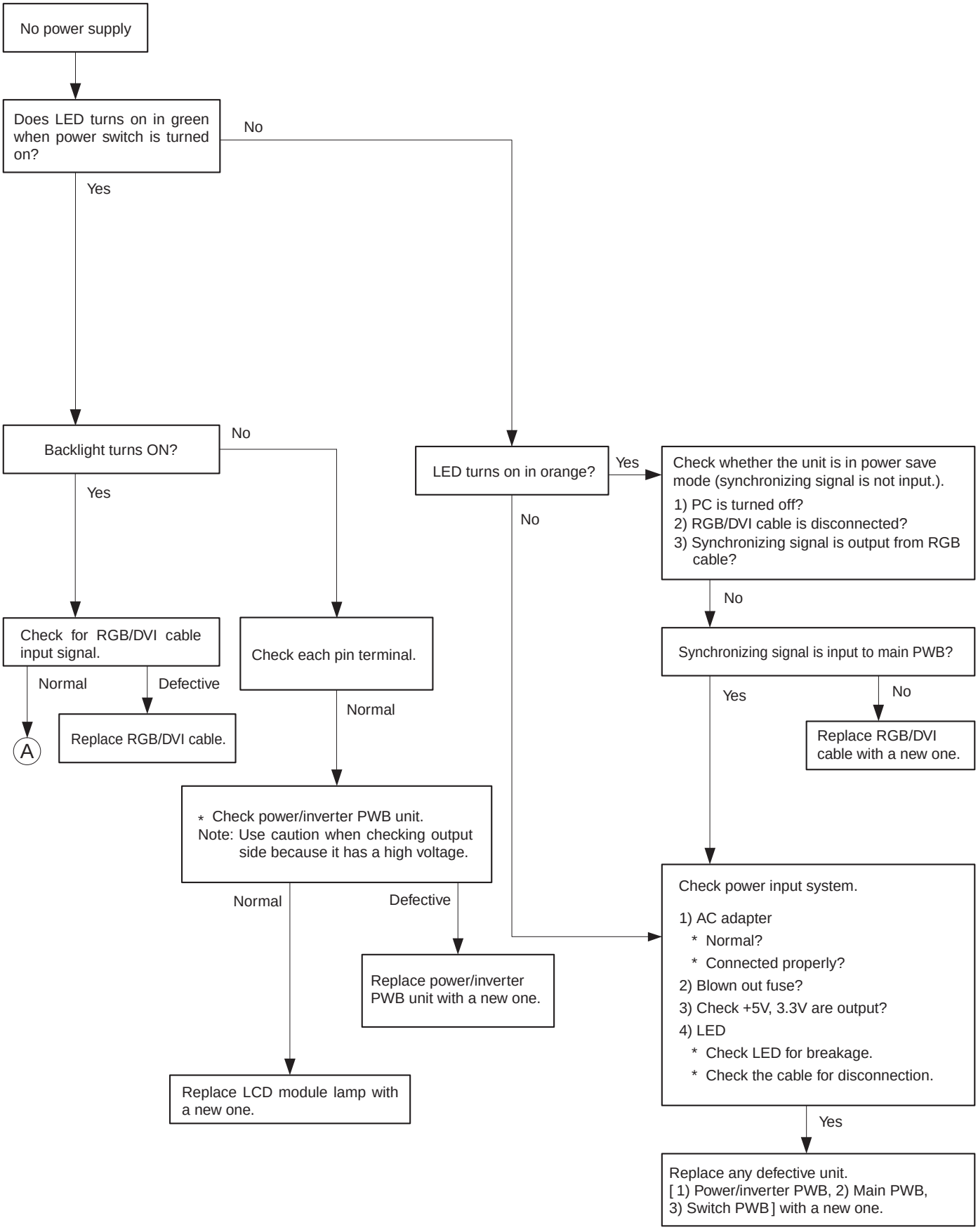
Connector CN602

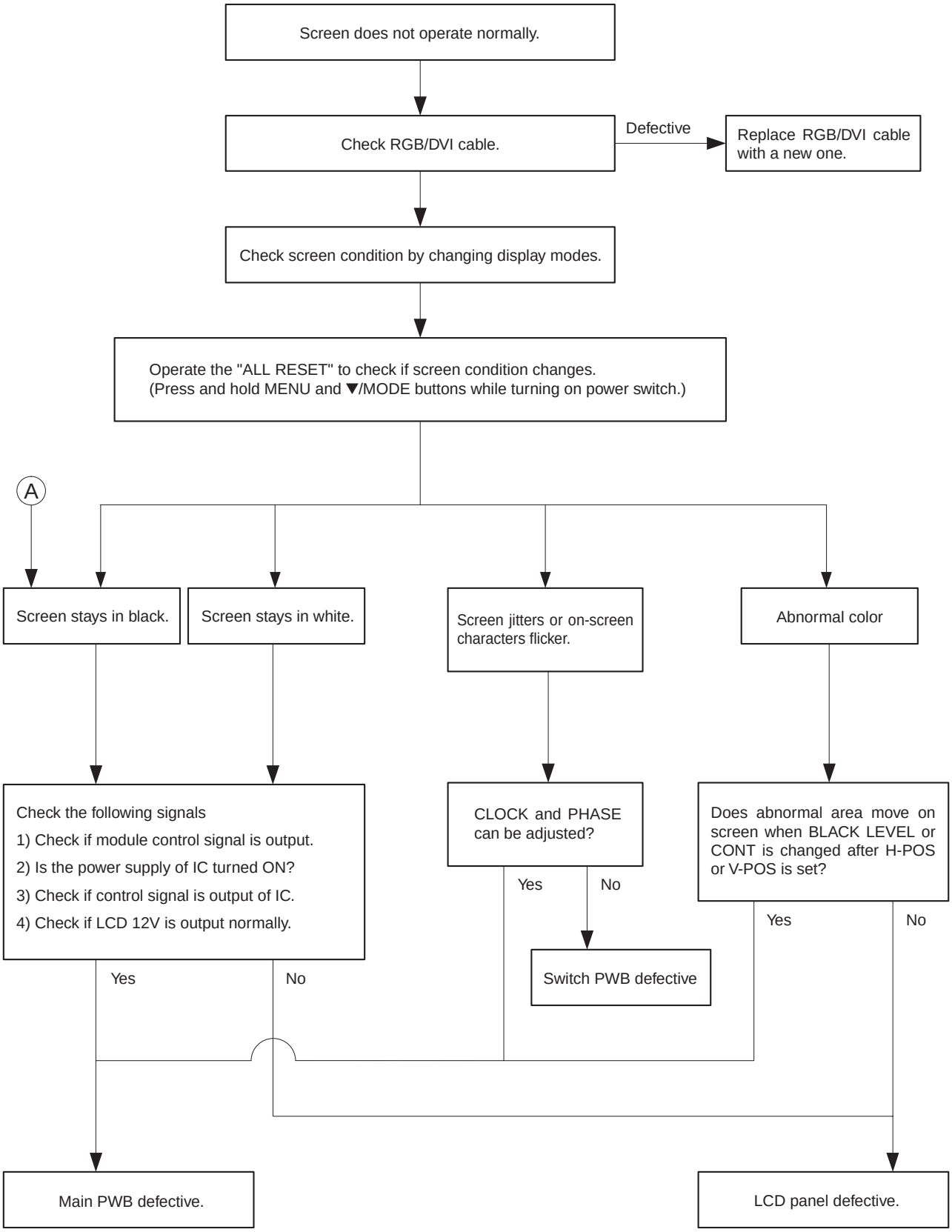
1	RED
2	GREEN
3	BLUE
4	GND
5	GND
6	GND
7	GND
8	GND
9	+5V
10	GND
11	GND
12	SDA
13	H-SYNC
14	V-SYNC
15	SCL

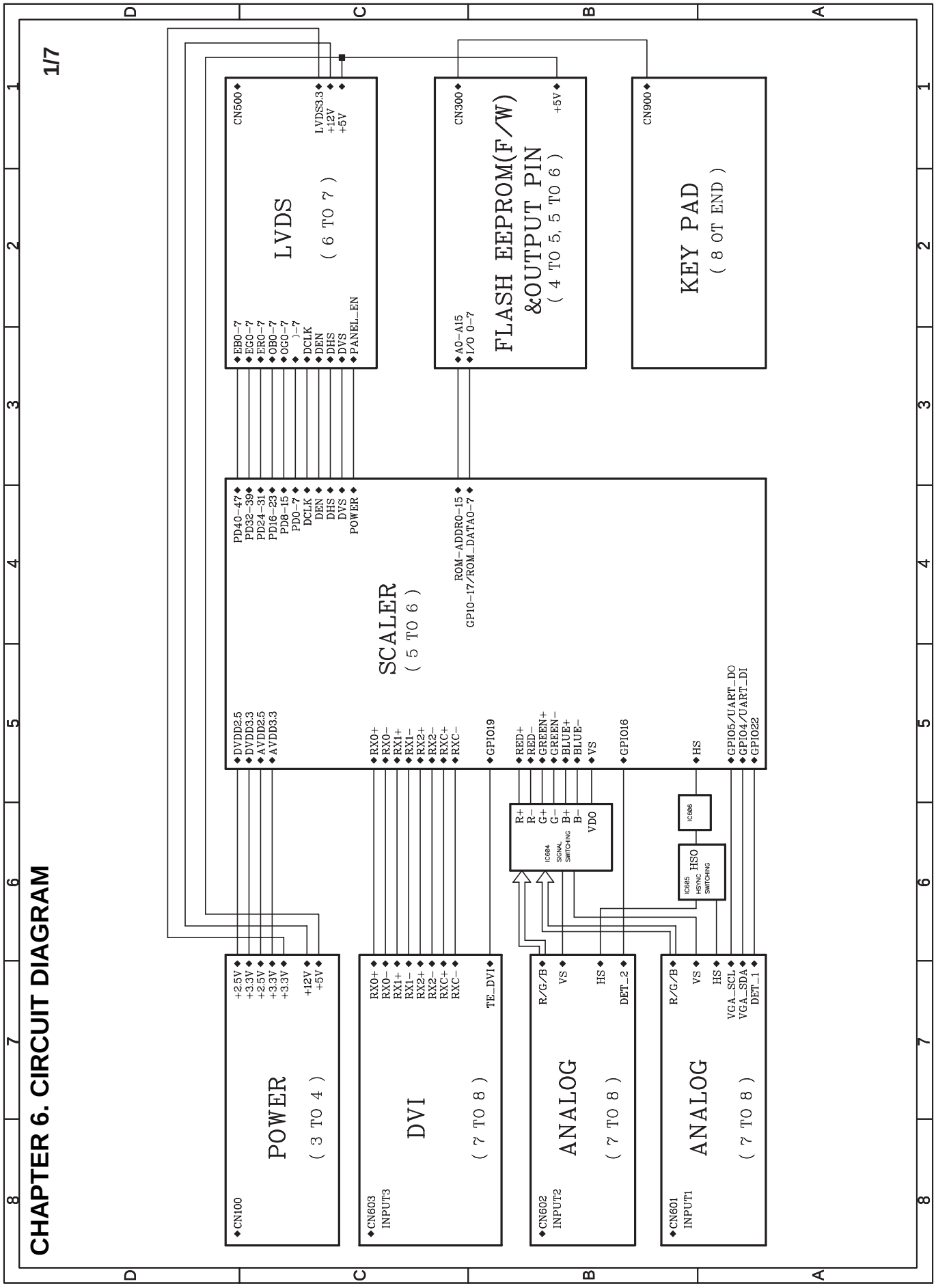
Connector CN603

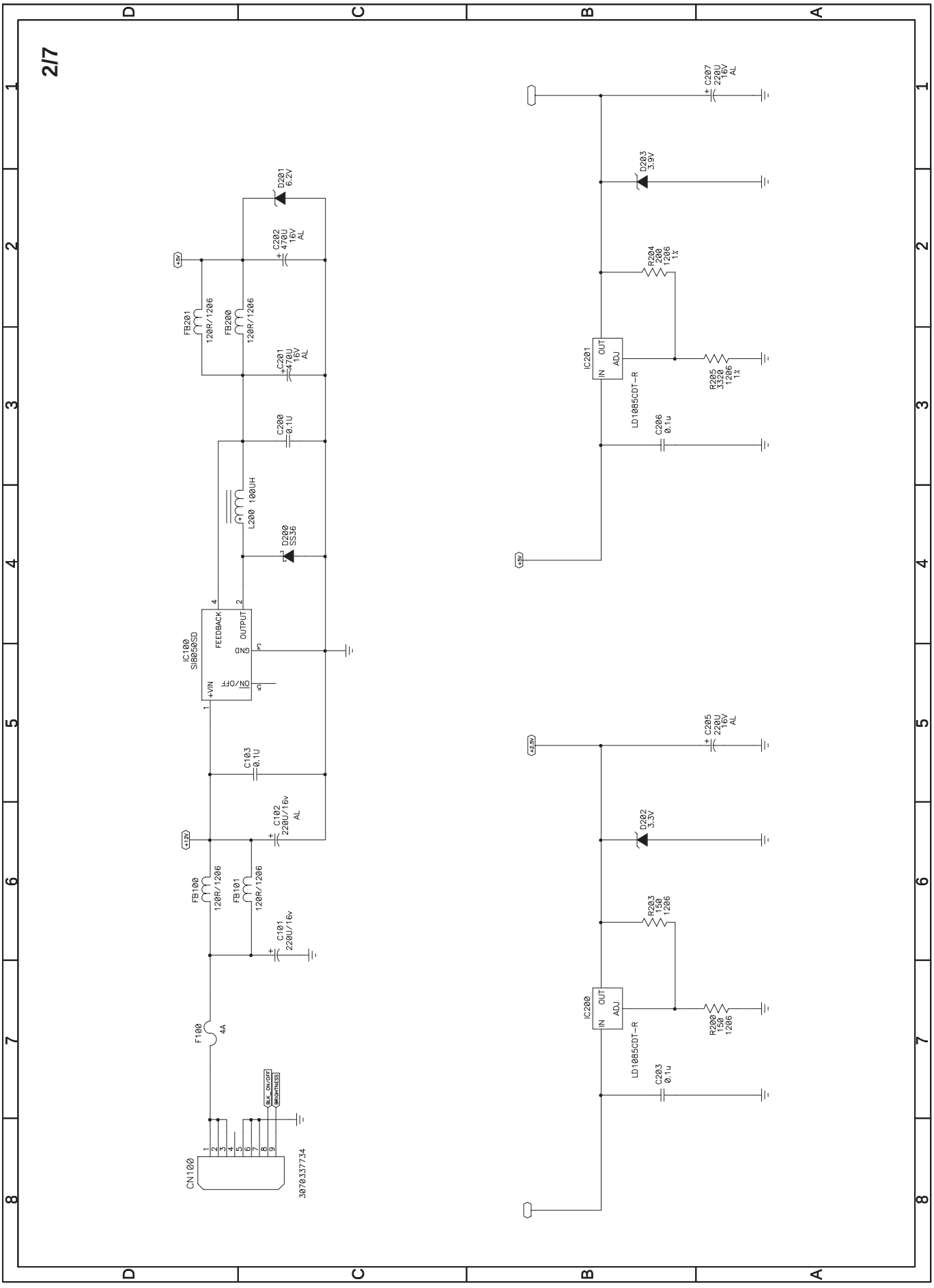
1	RX2-
2	RX2+
3	GND
4	N.C
5	N.C
6	SCL
7	SDA
8	N.C
9	RX1-
10	RX1+
11	GND
12	N.C
13	N.C
14	DVI_5V
15	+5V
16	DVI_5V
17	RX0-
18	RX0+
19	GND
20	N.C
21	N.C
22	GND
23	RXC+
24	RXC-

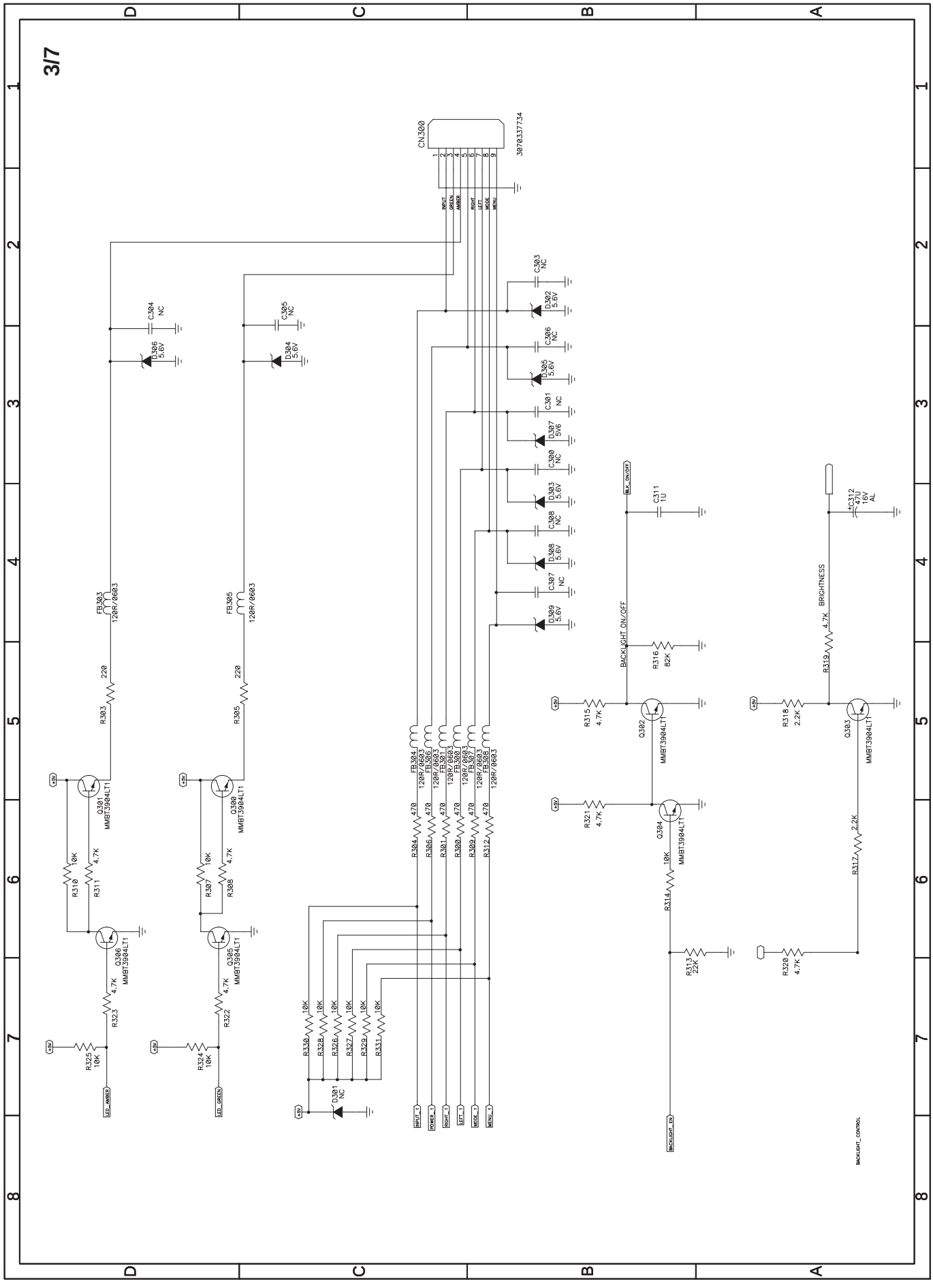
CHAPTER 5. TROUBLE SHOOTING

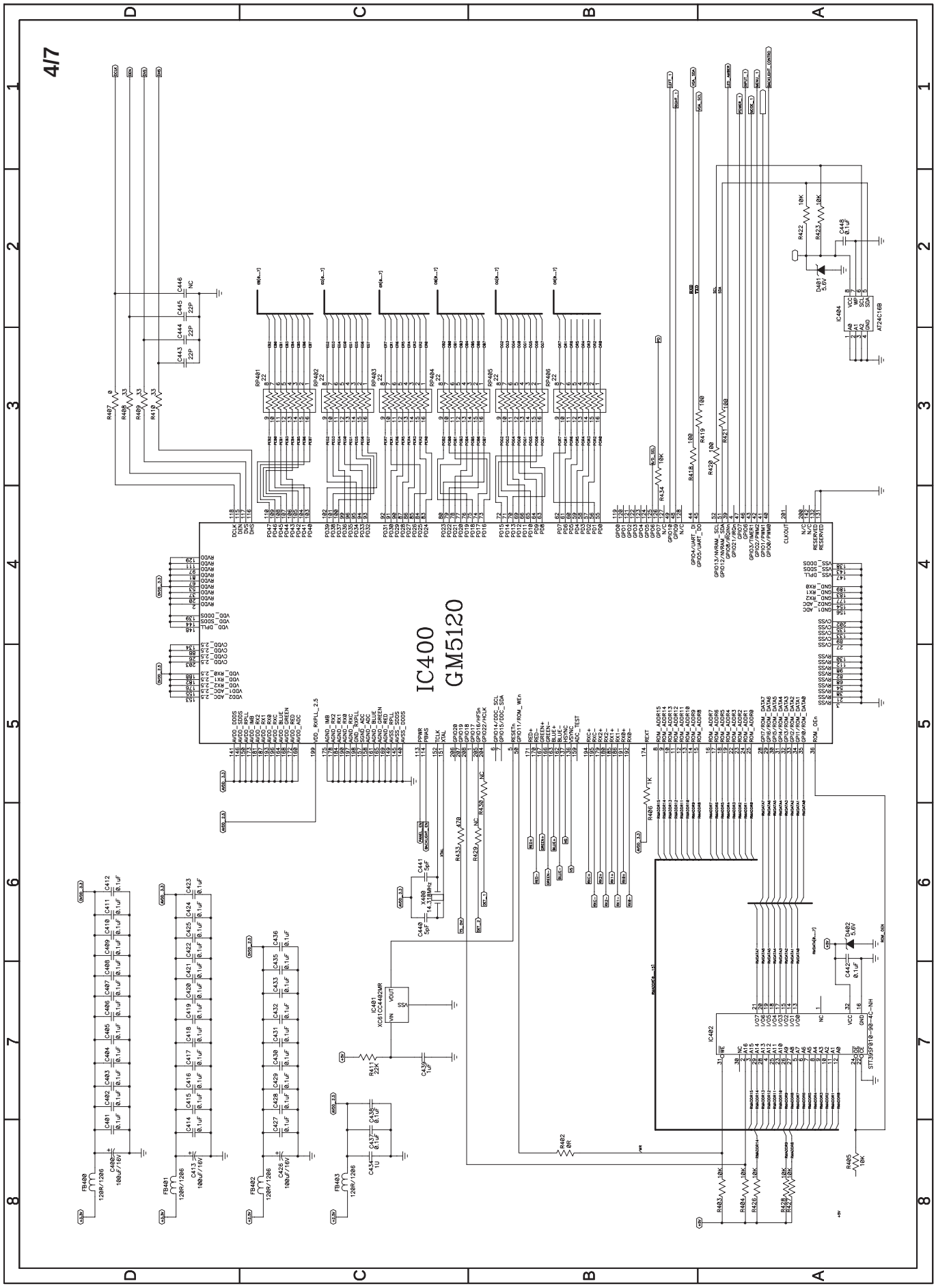

No power supply
Does LED turns on in green when power switch is turned on?
No
Yes
Backlight turns ON?
No
Yes
LED turns on in orange?
Yes
No
Check whether the unit is in power save mode (synchronizing signal is not input.).
1) PC is turned off?
2) RGB/DVI cable is disconnected?
3) Synchronizing signal is output from RGB cable?
No
Synchronizing signal is input to main PWB?
Yes
No
Replace RGB/DVI cable with a new one.
Check for RGB/DVI cable input signal.
Normal
Defective
A
Replace RGB/DVI cable.
Check each pin terminal.
Normal
* Check power/inverter PWB unit.
Note: Use caution when checking output side because it has a high voltage.
Normal
Defective
Replace power/inverter PWB unit with a new one.
Replace LCD module lamp with a new one.
Check power input system.
1) AC adapter
* Normal?
* Connected properly?
2) Blown out fuse?
3) Check +5V, 3.3V are output?
4) LED
* Check LED for breakage.
* Check the cable for disconnection.
Yes
Replace any defective unit.
[1) Power/inverter PWB, 2) Main PWB,
3) Switch PWB] with a new one.

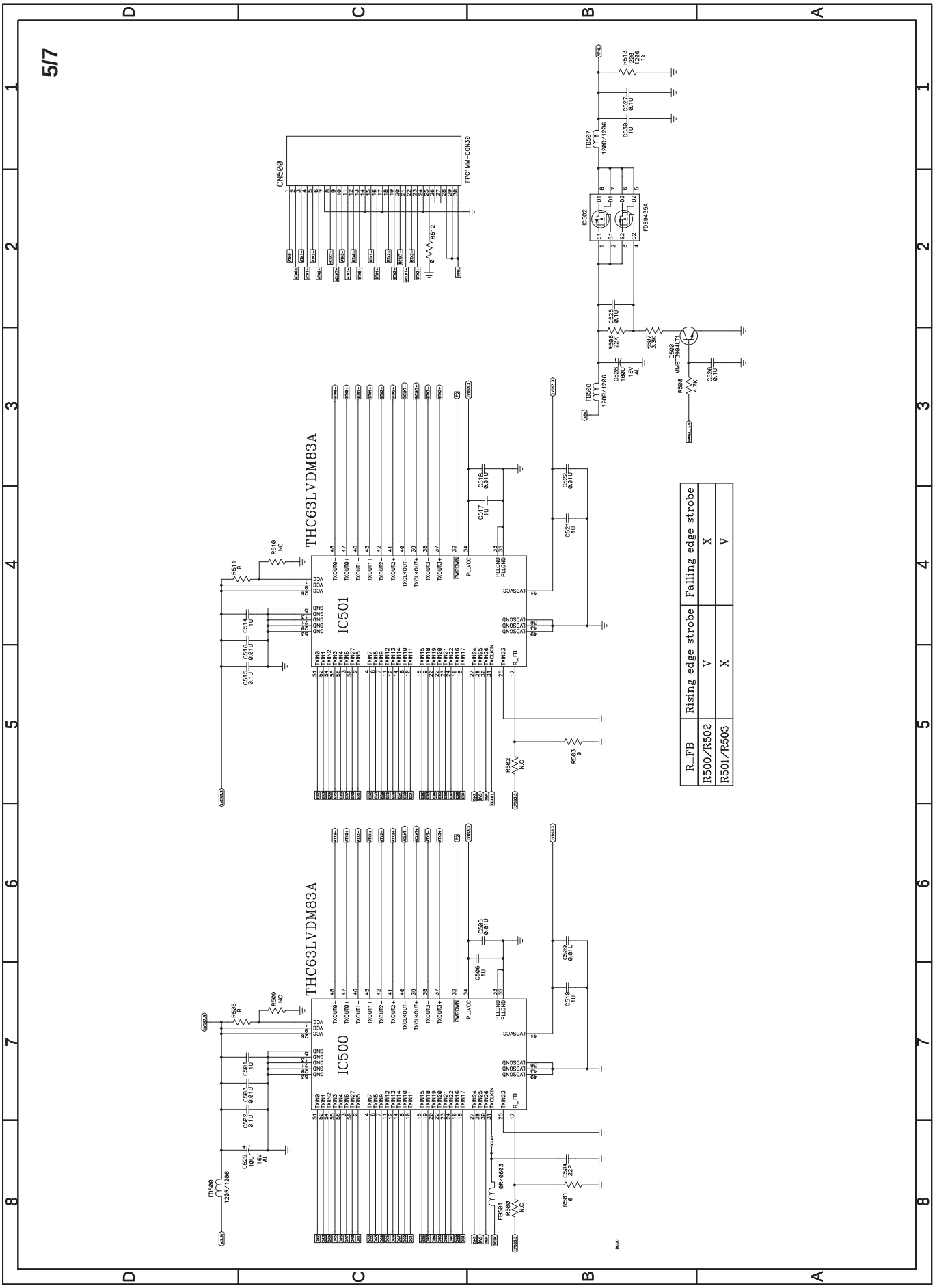

Screen does not operate normally.
Check RGB/DVI cable.
Defective
Replace RGB/DVI cable with a new one.
Check screen condition by changing display modes.
Operate the "ALL RESET" to check if screen condition changes.
(Press and hold MENU and ▼/MODE buttons while turning on power switch.)
A
Screen stays in black.
Screen stays in white.
Screen jitters or on-screen characters flicker.
Abnormal color
Check the following signals
1) Check if module control signal is output.
2) Is the power supply of IC turned ON?
3) Check if control signal is output of IC.
4) Check if LCD 12V is output normally.
CLOCK and PHASE can be adjusted?
Yes
No
Switch PWB defective
Does abnormal area move on screen when BLACK LEVEL or CONT is changed after H-POS or V-POS is set?
Yes
No
Yes
No
Main PWB defective.
LCD panel defective.

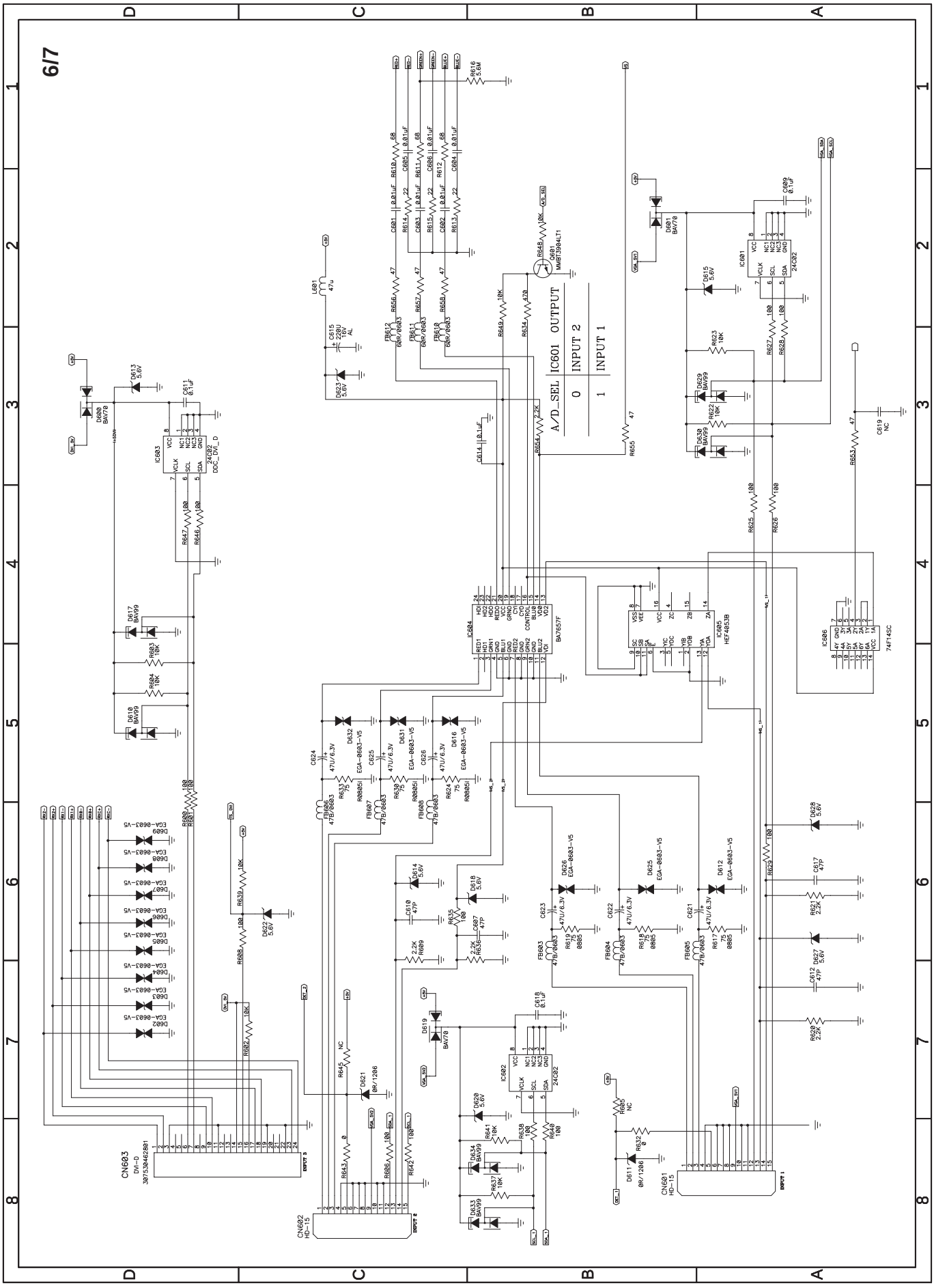

CHAPTER 6. CIRCUIT DIAGRAM
1/7
CN500
LVDS
(6 TO 7)
LVDS3.3
+12V
+5V
EB0–7
EG0–7
ER0–7
OB0–7
OG0–7
DCLK
DEN
DHS
DVS
PANEL_EN
CN300
FLASH EEPROM(F/W)
&OUTPUT PIN
(4 TO 5, 5 TO 6)
+5V
A0–A15
I/O 0–7
CN900
KEY PAD
(8 OT END)
SCALER
(5 TO 6)
PD40–47
PD32–39
PD24–31
PD16–23
PD8–15
PD0–7
DCLK
DEN
DHS
DVS
POWDR
ROM–ADDR0–15
GP10–17/ROM_DATA0–7
DVDD2.5
DVDD3.3
AVDD2.5
AVDD3.3
RX0+
RX0–
RX1+
RX1–
RX2+
RX2–
RXC+
RXC–
GPIO19
RED+
RED–
GREEN+
GREEN–
BLUE+
BLUE–
VS
GPIO16
HS
GPIO5/UART_DO
GPIO4/UART_DI
GPIO22
IC684
SIGNAL SWITCHING
R+
R–
G+
G–
B+
B–
VDO
IC686
IC685
HSYNC
HSO
SWITCHING
CN100
POWER
(3 TO 4)
+2.5V
+3.3V
+2.5V
+3.3V
+3.3V
+12V
+5V
CN603
INPUT3
DVI
(7 TO 8)
RX0+
RX0–
RX1+
RX1–
RX2+
RX2–
RXC+
RXC–
TE_DVI
CN602
INPUT2
ANALOG
(7 TO 8)
R/G/B
VS
HS
DET_2
CN601
INPUT1
ANALOG
(7 TO 8)
R/G/B
VS
HS
VGA_SCL
VGA_SDA
DET_1

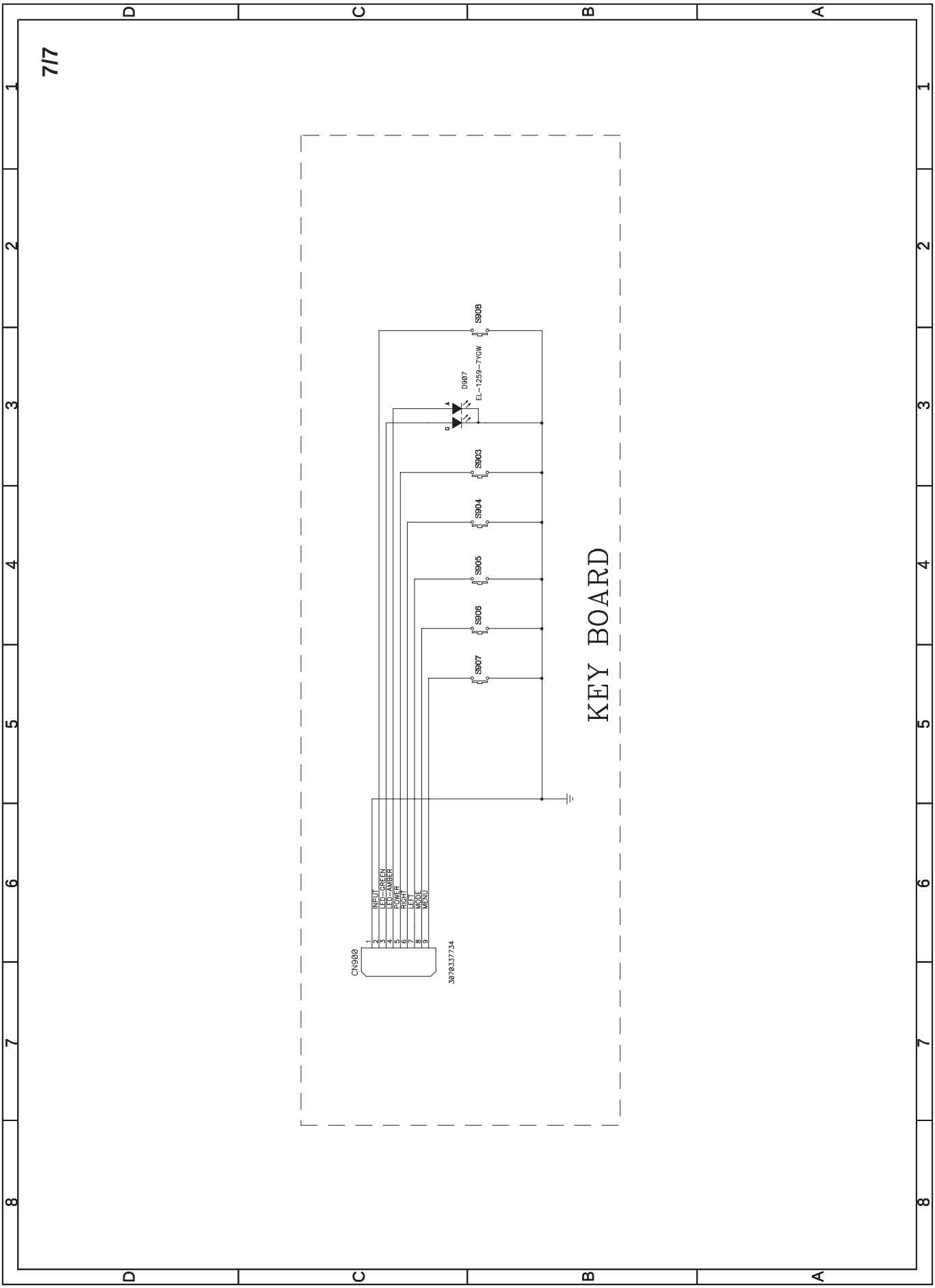

2/7
D
C
B
A
1
2
3
4
5
6
7
8
CN100
3070337734
F100
4A
FB100
120R/1206
FB101
120R/1206
FB201
120R/1206
FB200
120R/1206
C101
220U/16v
C102
220U/16v
AL
C103
0.1U
C200
0.1U
C201
470U
16V
AL
C202
470U
16V
AL
C203
0.1u
C205
220U
16V
AL
C206
0.1u
C207
220U
16V
AL
D200
SS36
D201
6.2V
D202
3.3V
D203
3.9V
L200 100UH
IC100
SI8050SD
+VIN
ON/OFF
GND
OUTPUT
FEEDBACK
IC200
IC201
LD1085CDT-R
IN
OUT
ADJ
R200
150
1206
R203
150
1206
R204
200
1206
1%
R205
332Ω
1206
1%
+12V
+5V
+3.3V
BLK_ON/OFF
BRIGHTNESS

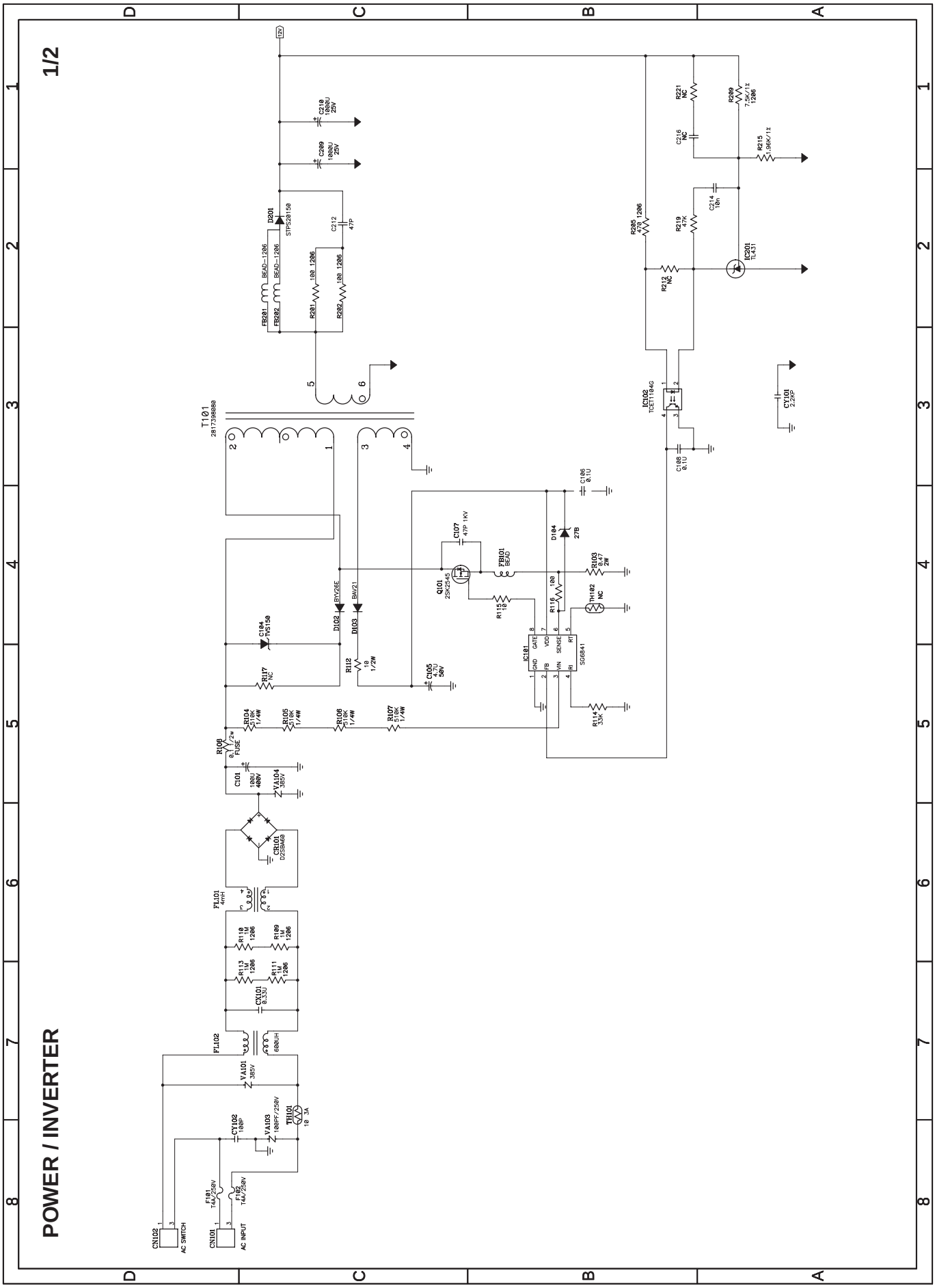

3/7
CN300
30703337734
INPUT
GREEN
AMBER
RIGHT
LEFT
MODE
MENU
BACKLIGHT_CONTROL
BRIGHTNESS
BACKLIGHT ON/OFF
BK_ON/OFF
LED_AMBER
LED_GREEN
BACKLIGHT_EN
INPUT_1
POWER_1
RIGHT_1
LEFT_1
MODE_1
MENU_1
+5V
Q301 MMBT3904LT1
Q300 MMBT3904LT1
Q306 MMBT3904LT1
Q305 MMBT3904LT1
Q302 MMBT3904LT1
Q304 MMBT3904LT1
Q303 MMBT3904LT1
FB303 120R/0603
FB305 120R/0603
FB304 120R/0603
FB301 120R/0603
FB306 120R/0603
FB307 120R/0603
FB308 120R/0603
FB302 120R/0603
R303 220
R305 220
R310 10K
R311 4.7K
R307 10K
R308 4.7K
R323 4.7K
R322 4.7K
R325 10K
R324 10K
R304 470
R306 470
R301 470
R302 470
R309 470
R312 470
R330 10K
R328 10K
R326 10K
R327 10K
R329 10K
R331 10K
R315 4.7K
R316 82K
R321 4.7K
R314 10K
R313 22K
R318 4.7K
R317 2.2K
R320 4.7K
R319 2.2K
C311 1U
C312 47U 16V AL
C304 NC
C305 NC
C303 NC
C306 NC
C301 NC
C300 NC
C308 NC
C307 NC
D306 5.6V
D304 5.6V
D302 5.6V
D305 5.6V
D307 5V6
D303 5.6V
D308 5.6V
D309 5.6V
D301 NC

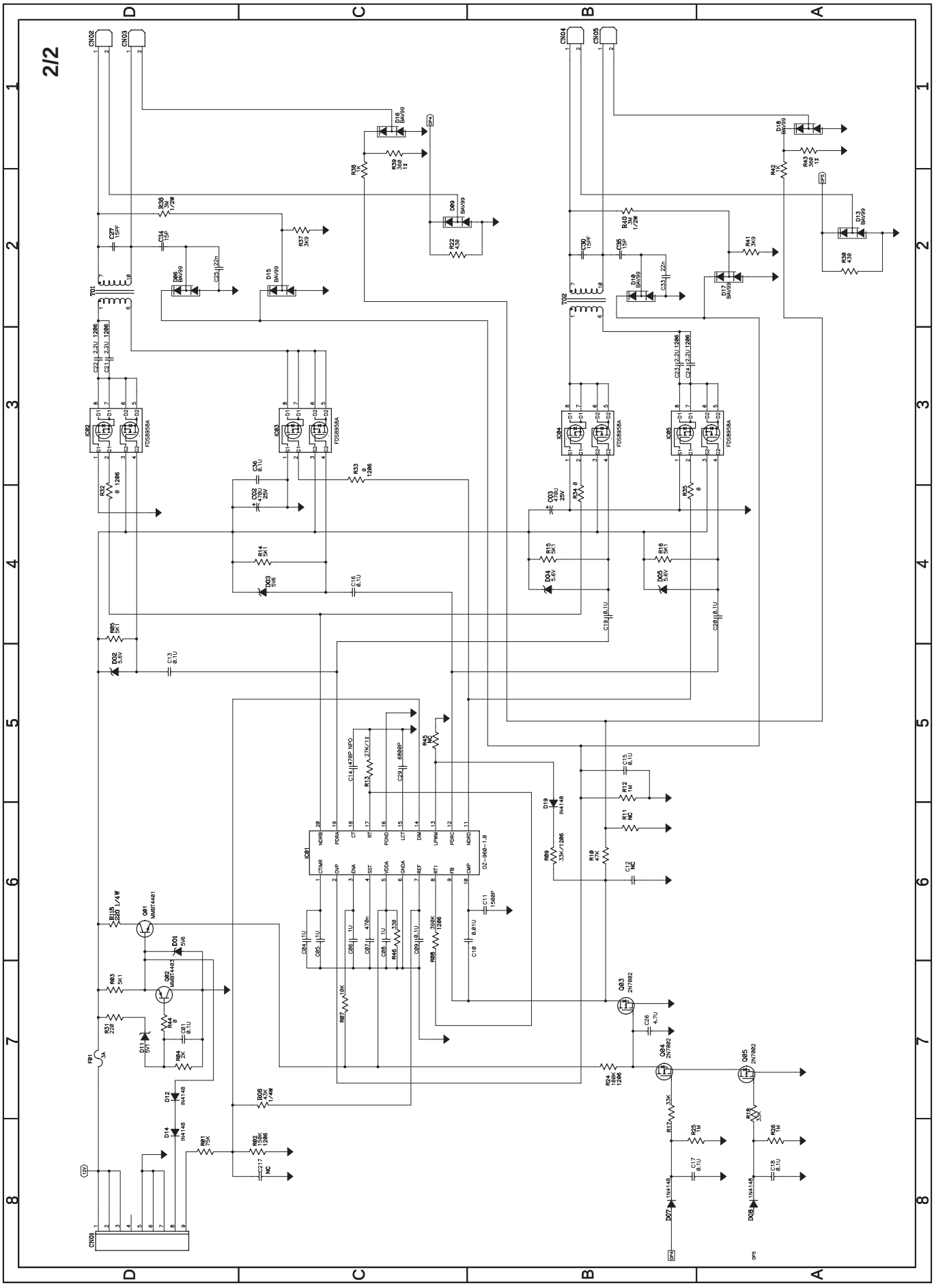

4/7
IC400
GM5120


5/7
CN500
FPC1MM-CON30
IC501
THC63LVDM83A
IC500
THC63LVDM83A
IC502
FDS9435A
Q500
MMBT3904(T)
R_FB
R_FB | Rising edge strobe | Falling edge strobe
R500/R502 | V | X
R501/R503 | X | V


6/7
A/D_SEL | IC601 OUTPUT
0 | INPUT 2
1 | INPUT 1
CN603
DVI-D
3075364028O1
CN602
HD-15
CN601
HD-15
IC604
BA7657F
IC605
HEF4053B
IC606
74F14SC
IC601
24C02
IC602
24C02
IC603
24C02
Q601
MMBT3904LT1


7/7
KEY BOARD
S908
D907
EL-1259-7YGW
S903
S904
S905
S906
S907
CN900
INPUT
LED_GREEN
LED_AMBER
POWER
RIGHT
LEFT
MODE
MENU
3078337734

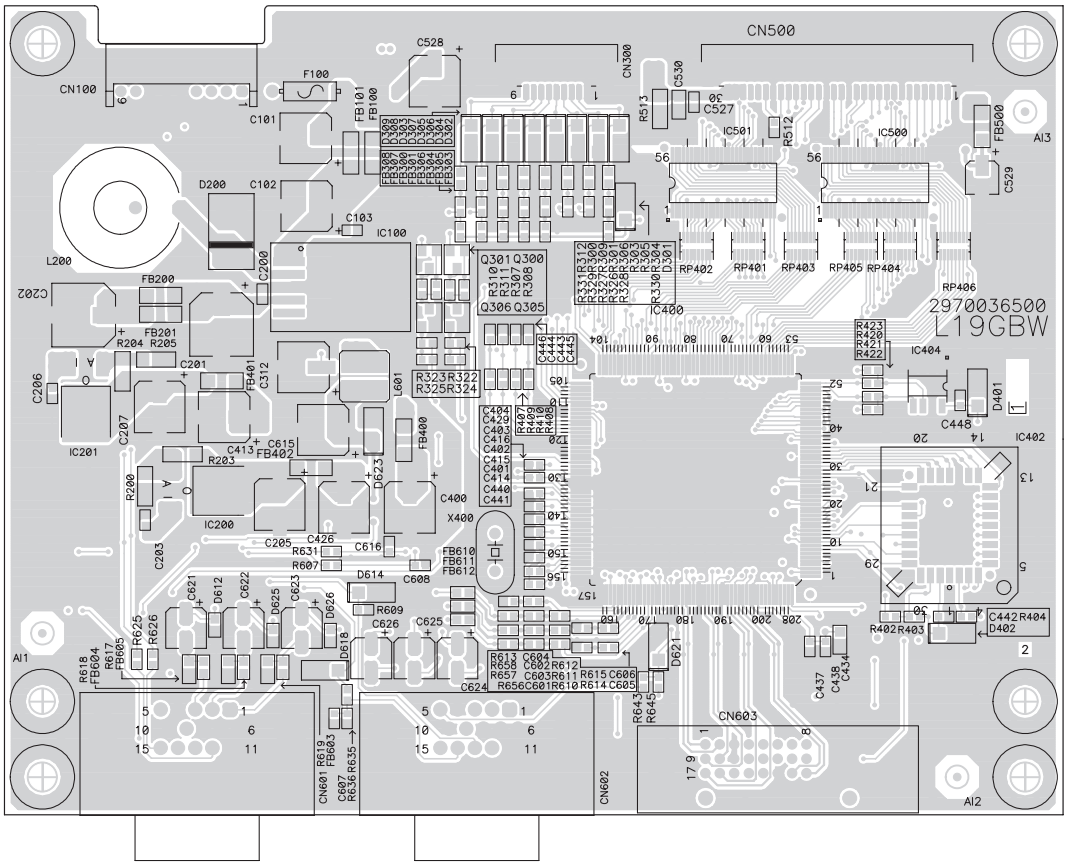

POWER / INVERTER
1/2
AC SWITCH
AC INPUT
CN102
CN101
F101
F102
T4A/250V
TH101
10 3A
CY102
100P
VA103
100PF/250V
VA101
385V
FL102
680UH
CX101
0.33U
FL101
4mH
R118
1M
1206
R189
1M
1206
R113
1M
1206
R111
1M
1206
CR101
D25SB60
C101
180U
400V
VA104
385V
R108
0.1 1/2w
FUSE
R104
510K
1/4W
R105
510K
1/4W
R106
510K
1/4W
R107
510K
1/4W
T101
2817398080
C104
TVS150
R117
NC
D102
RYY26E
D103
BAV21
R112
10
1/2W
C105
4.7U
50V
C107
47P 1KV
Q101
2SK2545
FB101
BEAD
R115
10
IC101
GND
FB
VIN
RI
GATE
VDD
SENSE
RT
SG6841
R116
100
TH102
NC
D104
27B
R103
0.47
2W
R114
33K
C186
0.1U
C188
0.1U
IC102
TCET1184G
R212
NC
R285
470
1206
R219
2K
IC201
TL431
C214
10n
R221
NC
C216
NC
R289
7.5K/1%
1206
R215
3.06K/1%
CY101
2.2KP
D201
STPS2815B
C212
47P
FB201
BEAD-1206
FB202
BEAD-1206
R201
100
1206
R202
100
1206
C210
1000U
25V
C209
1000U
25V
25V


2/2

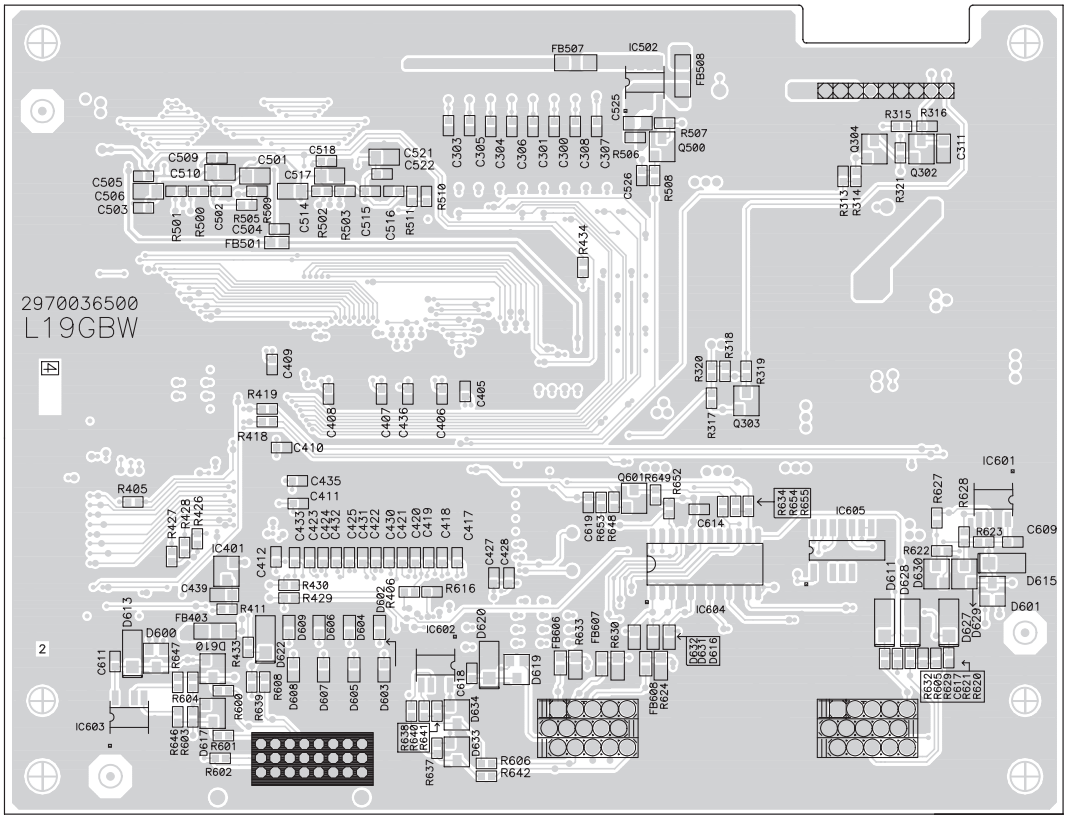
CHAPTER 7. PWB LAYOUT

MAIN PWB

A side

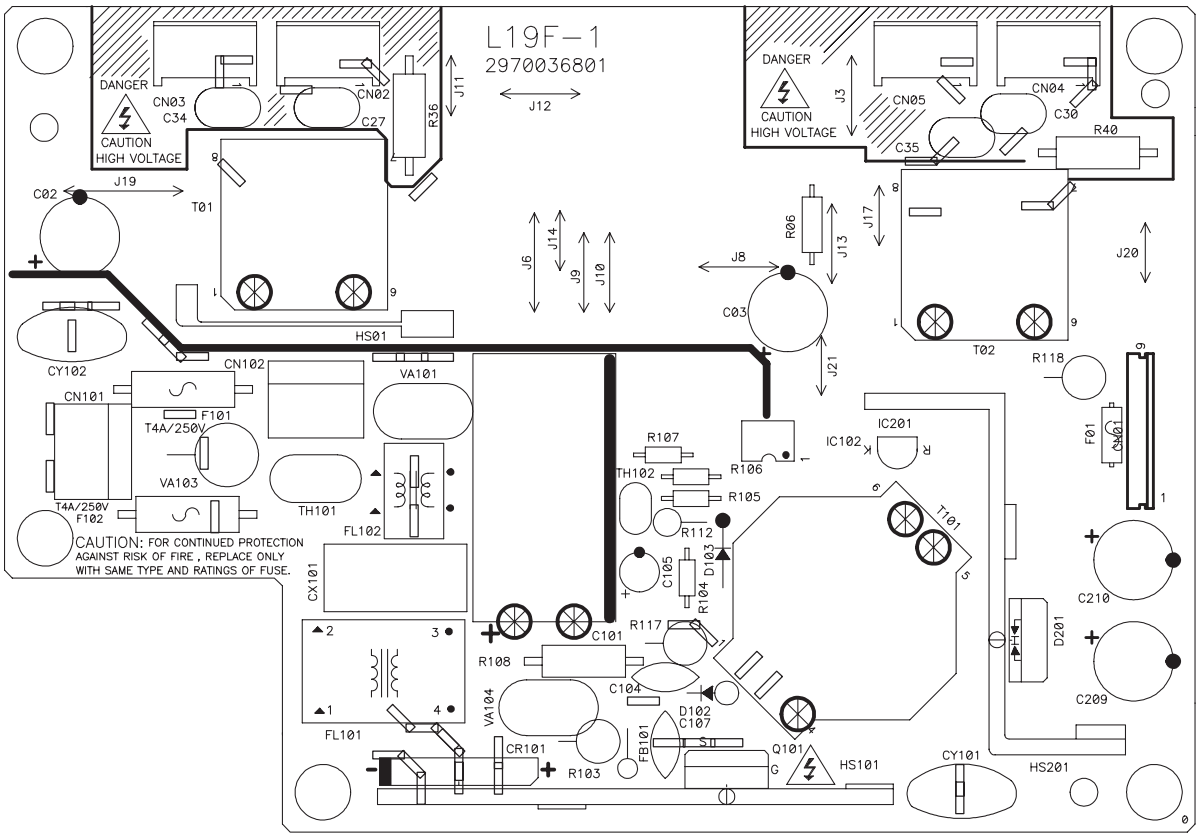


B side



POWER SUPPLY PWB

A side



B side